



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,175	10/20/2003	Wyatt T. Riley	030175	3948

23696 7590 04/07/2005

Qualcomm Incorporated
Patents Department
5775 Morehouse Drive
San Diego, CA 92121-1714

EXAMINER

ISSING, GREGORY C

ART UNIT	PAPER NUMBER
----------	--------------

3662

DATE MAILED: 04/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/690,175

Applicant(s)

RILEY ET AL.

Examiner

Gregory C. Issing

Art Unit

3662

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-78 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-78 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

Art Unit: 3662

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-78 are rejected under 35 U.S.C. 102(e) as being anticipated by Tsunehara et al (US2002/0132626).

Tsunehara et al disclose reception and measurement of GPS signals and cellular signals, determination of a reliability indicator for each of the measurements and the weighting of the measurements using the reliability indicators to compute a position. The reliability indicator is an indication of the number of satellites/base stations received from and/or the signal quality (SNR, e.g.) of the received signals that are used in the position measurement. A final position is determined from a weighted combination of the GPS and cellular signals wherein all or a combination of signals from the respective sources may be used. Thus, the quality of the received signals is an indication of the false alarm probability of the associated measurement. Also, the GPS measurement along with its reliability indicator is combined with the cellular position measurement along with its reliability indicator to generate a weighted position whose reliability is based thereon. Each of the reliability indicators indicates an a priori false alarm probability since the number of satellites is a clear indication of whether or not a position is probable. The elimination of a measurement is also disclosed since a reliability indication of '0' would result in the elimination of that measurement.

3. Claims 1-78 are rejected under 35 U.S.C. 102(e) as being anticipated by Brodie (6,691,066).

Brodie disclose a measurement fault detector wherein a plurality of measurements for position determination are made, sorted in order of increasing fault probability, and processed. Brodie discloses a system for improving the measurement of fault detection wherein processing is such that measurements of increasing probability of a measurement fault are ordered. In one instance it is noted that the lower the elevation of a satellite, the higher the probability of a multi-path-induced fault on its pseudorange measurement than a higher elevation satellite; thus teaching the use of a priori false alarm indicators. Similarly, multipath corrupted measurements are typically observed to

Art Unit: 3662

have a lower carrier to noise density ratio than uncorrupted measurements. Thus, Brodie disclose determining plural measurements in a GPS receiver for a position determination therefrom wherein each of the measurements is associated with a fault probability and the plurality of measurements are sorted for processing in order of increasing probability. The fault probability associated with the elevation of the satellite is an a priori indication as taught above.

4. Claims 1-78 are rejected under 35 U.S.C. 102(b) as being anticipated Watters et al (6,249,245).

Watters et al disclose combining measurements from GPS satellites and cellular base stations wherein each of the measurements may be weighted based on the accuracy of each measurement using a confidence value, see for example col. 23, lines 3-27. The confidence value is an expected error and thus meets the scope of an a priori indicator.

5. Claims 1-78 are rejected under 35 U.S.C. 102(e) as being anticipated by Martorana et al (6,486,831).

Martorana et al disclose a system and method for determining position including evaluating range measurements so that only acceptable range measurements are supplied to a tracking filter used for determining an accurate position. A two stage process includes development of a measurement accuracy based on standard deviation of the last N range measurements, error between range measurement and estimated fading average range, a signal to noise ratio, number of rake taps used in the receiver, a quality of fit metric. The measurement accuracy determination determining the error between range measurement and estimated fading average range meet an a priori indication since the estimated fading average range is a previously determined value. The use of the signal to noise ratio discloses determining the reliability indicator from the signal measurement.

6. Claims 1-10, 21-30, 41-50 and 61-68 are rejected under 35 U.S.C. 102(b) as being anticipated by Mathis et al.

Mathis et al disclose a system and method for combining relative and absolute positioning measurements including determining contours of equal probability for each measurement, see Figure 3.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Mizuno (6,480,784) discloses a system and method that transmits and stores only selected data sets including the use of a position recording judgement section that uses one or more judgement criteria to obtain an indication of the degree of accuracy of each position calculated. In accordance with meeting a specific criteria, a portion of a series of data sets are stored and transmitted wherein the specific criteria is an indication of a probable degree of accuracy. A specific criteria may include the number of satellites and GDOP used in the position determination,

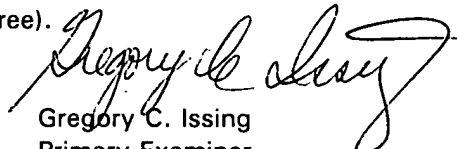
Art Unit: 3662

each of which has been previously shown to be an priori indicator of false alarm probability. Ito (5,999,126) discloses a position measuring apparatus and system including a GPS certainty detector utilizing a GDOP signal (col. 5, lines 42-49); the GDOP provides an a priori indication of false alarm probability in that the GDOP provides an indication of a good or bad arrangement of satellites wherein an increase in the GDOP is an indication of increased error. Edlund (US2003/0130987) discloses a system and method for implementing relevance assessment for location information received from multiple sources.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory C. Issing whose telephone number is (571)-272-6973. The examiner can normally be reached on Monday - Thursday 6:00 AM- 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Tarcza can be reached on (571)-272-6979. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Gregory C. Issing
Primary Examiner
Art Unit 3662

gci